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Title: Acquired subungual fibrokeratoma

Short title: Acquired fibrokeratoma

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We report here a case of acquired subungual fibrokeratoma evaluated by dermoscopy.

A 32-year-old Japanese woman presented with a subungual nodule on her left thumb.

She had been aware of the lesion for one year.

She had a past history of multiple acquired fibrokeratomas, but there was no evidence of tuberous sclerosis complex.

Physical examination revealed a milky white nodule, approximately 2 mm in diameter, located on the tip of the left thumb (Fig. 1a). Dermoscopic observation showed a homogeneous white longitudinal band, approximately 2×15 mm in size, under the nail plate (Fig. 1b). Based on these findings, we suspected that it was acquired subungual fibrokeratoma or verruca vulgaris. The tumor originated from the central portion of the nail bed (Fig. 1c).

Histopathological examination revealed epidermal hyperkeratosis and acanthosis in the epidermis (Fig.1d). There was also mild proliferation of collagen bundles with some inflammatory cells in the dermis (Fig.1e). Periodic acid-Schiff and Grocott stain were both negative (not shown). Finally, a diagnosis of acquired subungual fibrokeratoma was made.

Acquired subungual or periungual fibrokeratoma is a rare solitary fibrous tumor located on or around the nail. Yasuki classified the disease into 5 subtypes (I p: proximal nail

fold, I m: dermis beneath the nail matrix, I b: nail bed, II p: dermis of the dorsum of the distal phalanx, and II l: lateral nail fold) based on the anatomical location.¹ Our case can be classified into type I b. To our knowledge, there have been only a few reports on dermoscopic observation of acquired periungual fibrokeratoma.^{2,3} Goktay et al. reported two cases of acquired periungual fibrokeratoma (type I p) on the finger and toe. Skin-colored filiform maggot-like structures with a fine hemorrhagic crust at the tips of the fingers and multibranched, skin-colored, finger-like structures on the foot were seen.² Takahashi et al. reported a case of acquired periungual fibrokeratoma (type II p) on the toe. Clumps of homogeneous red lacunae with a white meshwork-like septal wall were observed.³ There has been no report of dermoscopic examination of acquired periungual fibrokeratoma type I b.

Judging from those reported cases, dermoscopic features of acquired fibrokeratoma are homogeneous white or milky-white colored structures derived from hyperkeratosis and dilatation or proliferation of capillary vessels and increase of collagen bundles.

It is most likely that the white area in the present case was derived from hyperkeratosis.

Since the lesion was located under the nail plate, there was no reddish structure.

Clinical and histopathological differential diagnosis includes onychomycosis, onychomatricoma⁴ and onychopapilloma.⁵ Histopathological features of

onychomatricoma are the multiple filiform projections and nail plate perforations.⁴

Onychopapilloma shows prominent nail bed acanthosis, papillomatosis and matrix metaplasia. Occasionally, multinucleated clumping cells without nuclear atypia are seen.⁵ However, these features were not seen in our case. In aspect of dermoscopic findings, a small subungual keratotic mass where the band reaches the nail plate margin provided a clue for the diagnosis of onychopapilloma.⁵ It seems to be very difficult to differentiate APF from onychopapilloma by only dermoscopic examination.

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Figure Legends

Figure 1. a) Milky-white nodule on the tip of the left thumb. **b)** Homogeneous whitish structure shown by dermoscopy. **c)** The tumor originated from the nail bed. **d)** Hyperkeratosis and acanthosis were seen in the epidermis. (hematoxylin-eosin [HE], original magnification $\times 40$) **e)** Slight proliferation of collagen bundles with some inflammatory cells was seen in the upper dermis. (HE, $\times 100$)

